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Ballistic Missile Defense

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SUMMARY

At the 2010 NATO summit in Lisbon, the alliance decided to move forward on the development of a territorial ballistic missile defense (BMD) system and explore avenues for cooperation with Russia in this endeavor. Substantial progress on BMD has been made over the past decade, but some questions remain regarding the ultimate strategic utility of such a system and whether its benefits outweigh the possible opportunity costs. Missile defense has been a point of contention between the US and its NATO allies, as well as between the West and Russia. This IFS Insight seeks to explore the latest developments on NATO missile defense, discuss the strategic aspects of the system and outline the challenges and pitfalls of NATO-Russian cooperation on missile defense.

EGGS IN A BASKET:
NATO, RUSSIA AND BALLISTIC MISSILE DEFENSE

At the annual Royal United Services Institute (RUSI) missile defense conference held in London in June 2011, the participants carefully tiptoed around an uncomfortable truth that continues to hinder cooperation with Russia on NATOs plans for a territorial ballistic missile defense system. Instead, the conference became so awash with metaphors that it became a running inside joke, with references to duck hunting, bears sleeping in their lairs, striped tigers and baskets full of eggs. Most often, though, were the discussions of the NATO missile defense "train": who was aboard and who wasn't, who might miss the train at the station, what sort of locomotives were pulling the train and the uncertainty of where the tracks actually led.

To summarize, then, it is safe to say that the train has definitely left the station due to the unnamed striped tiger, and while it's clear which actor is actually driving the train it's unclear how many others will help propel the train forward and also have their hand on the wheel. Moreover, this train runs the risk of duck hunting in such an unconventional manner, especially given where the tracks are now leading, that it might wake the bear in his lair and cause him to miss the train at the station, though he may eventually be able to board it at a later point – and the train conductors therefore run the risk of having all their eggs in one basket.

Well, *that* should clear things up nicely.

For those of you who are still confused, however, here's the crux of the issue in plain text. The NATO territorial missile defense system (*the train*), being developed to protect NATO countries in Europe against a medium range ballistic missile attack from Iran (*the tiger*) and eventually have the ability to counter a long range missile attack on the United States, is opposed by Russia (*the bear, of course*). The Russians are not convinced of the Iranian threat, they dislike the stationing of US missile defense assets close to their borders and in their former sphere of influence, and worry that the defensive system will eventually be able to intercept their missiles and thereby negate the strategic effects of their nuclear deterrent.

The United States and the rest of the alliance deny that the system will have this capability, and have entered into a dialogue with Moscow to explore avenues for cooperation on missile defenses as a means of allaying Russian concerns. These discussions have been difficult, however, because NATO refuses to give joint command authority to Moscow as part of a truly joint system. The alliance instead prefers two separate but overlapping and coordinated systems, which the Russians argue isn't the best way to hunt for ducks. But the uncomfortable truth that only briefly appeared at the RUSI conference is this: these two hunters have had their shotguns pointed at each other for so long (and in some ways continue to do so) that neither is entirely convinced that the other partner really wants to shoot ducks – and not them.

Although NATO insists that its missile defense system is not intended to intercept Russian missiles, they may not necessarily be prepared to give up that capability entirely. Neither NATO nor Russia fully trusts each other and this makes cooperation extremely difficult. At Lisbon, however, a number of countries agreed to the plans for territorial missile defense based on the promise of cooperation with Russia. Both the alliance and their potential partners in Russia now appear to view missile defense cooperation as the gateway to a broader Russian NATO strategic partnership in the future (*thereby putting all its eggs in one basket*). An enormous amount of political and strategic symbolism has now been laid at the foot of this cooperative project by both sides. But as we have repeatedly heard, the train has now left the station.

NATO'S PATH TO MISSILE DEFENSE

Secretary General Anders Fogh Rasmussen argued for such an outcome in the pages of the *International Herald Tribune* on 12 October 2010, during the build-up to NATO's November 2010 summit in Lisbon (Rasmussen 2010). Rasmussen first discusses the missile threat to Europe by adopting a conceptual trick from

the Bush administration, which dealt with strategic uncertainty by emphasizing capabilities rather than intent when planning force structures. Rasmussen notes that "over 30 countries have or are acquiring missiles ... some of which can already reach European cities", but then acknowledges that this "does not necessarily mean there is an immediate intent to attack us". This diffuse characterization of the threat is a result of Turkish geopolitics. Turkey would like to avoid aggravating its neighbors Iran and Syria – both singled out by the US in its 2010 *Ballistic Missile Defense Review* as rogue states – and voted against imposing further sanctions on Iran in June of that year. However, Ankara is preparing to build its own national missile defense system independent of NATO (against whom, one might wonder) and, according to at least one report (Bekdel and Enginsoy 2010), may leverage its consent to NATOs plans in order to obtain a more lucrative offer from US or European contractors. In any case, NATO painstakingly refrained from referring directly to Iran as the threat for which the system is being designed. As one NATO official noted, this was like providing a thorough description of the threat as an orange animal with stripes and a tail, without actually calling it a tiger.

STRATEGIC MISSIONS OF BMD

Next, Rasmussen invoked in his 2010 article an interesting and recognizable strategic argument by pointing out that NATO cannot "afford to be held hostage by the threat of an attack". The United States has pursued missile defenses in one form or another since the 1950s, with its current (and most operationally successful) developmental cycle having begun half-heartedly under President Clinton and with gusto under Bush. The strategic justifications for BMD have remained fairly constant from the Cold War up to the present US administration. Defenses can reassure allies of US extended deterrent guarantees (and avoid nuclear proliferation among allies) as well as reassure domestic populations in order to be able to sustain political support for strategic confrontations with adversaries wielding ballistic missiles. Defenses may also support deterrence efforts by raising the costs of an attack, reducing its benefits and thereby encouraging adversarial restraint. Conventional US military threats are also made more credible if deployed forces are protected from missile attack. If deterrence fails, defenses may defeat the incoming missile threat or limit the damages caused by an attack. The newest rationale, developed during the Bush administration and retained by the Obama team, is the idea that BMD may dissuade adversaries or potential adversaries from developing ballistic missiles. Reducing the operational effectiveness of such weapons may convince states not to invest their limited resources in these technologies.

Nevertheless, the primary concern for US policymakers remains the possibility of being deterred from acting to secure US interests. A 1999 RAND study put the issue plainly: missile defense is valuable not because "some rogue would otherwise launch an unprovoked, and patently suicidal, nuclear or biological attack on US territory" but that "an enemy regime could threaten such an attack in order to deter the United States – and conceivable carry out the threat if the United States were not deterred. An unprovoked attack is far-fetched; a coercion scenario is not" (Gompert and Isaacson 1999). The desire to retain strategic freedom of action and avoid nuclear coercion, or "nuclear blackmail", has been a (if not the) primary motivation behind all three post Cold War administrations' efforts to develop missile defenses. The psychological component of traditional deterrent threats is well known, even if its effectiveness in what many scholars have defined as a "second nuclear age" is doubted. Scholars such as Keith Payne and Colin Gray argue that states such as Iran, while not "irrational", may be "unreasonable" and follow a different cost-benefit calculus than Western countries, whereby the threat of a nuclear retaliatory strike may not be sufficient to deter. If true, one might question the notion that a US and/or European BMD system could "negate" any coercive threats, persuade an adversary from leveling them or avoid situations where a regional actor such as Iran initiated aggressive actions under the assumption that it would not be challenged due to its ballistic and nuclear capabilities. These are missile defense ca-

pabilities that cannot be engineered and are wholly reliant on the perceptions of those to be deterred.

Many of the participants at the RUSI conference – and in the missile defense community as a whole – appear to fall victim to a disturbing conceptual fallacy. In order to effectively deter by denial a potential adversary's missile capability or the strategic leverage conferred by such a capability, one's own defensive capabilities must be sufficient to credibly negate the adversary's potential missile threat. As Iran makes qualitative and quantitative improvements to its missile arsenal, the BMD architecture for Europe must logically follow suit. The need to construct defenses capable of deflecting large numbers of Iranian missiles launched at Europe simultaneously (a so-called "raid" scenario), however, fails to recognize the utter irrationality of such an attack ever taking place. No one doubts that a massive Iranian missile attack on Europe would constitute an act of national suicide due to the justifiable nuclear response of the United States and its allies. While such an event is possible – just as the Cuban missile crisis may have led to a massive nuclear exchange between the US and the USSR – it remains highly unlikely. By planning for the 'worst case scenario' in order to have sufficient deterrent capability, many missile defense supporters appear to accept this scenario as a real possibility, conflating the possible scenario with the actual threat. By doing so, they run the risk not only of escalating tensions with Iran and Russia, but also of burden themselves with unnecessary political and economic opportunity costs.

EFFECTIVENESS AND COST

Rasmussen argued in his op-ed piece that the alliance was now "able to field mature systems that have been successfully tested". NATO's Active Layered Theater Missile Defense (ALTBMD) program, established in 2005, is a "system of systems" that links together the national assets of NATO members into a coordinated defensive network. This command and control (C2) function has yet to actually conduct an integrated flight test, although a limited number of ground tests have been performed. The assets currently fielded by NATO countries in Europe are designed to intercept missiles lower in the atmosphere in the "terminal" or last phase of flight, and include the operationally proven US Patriot (PAC-2 and PAC-3) system (operated by Germany, Greece, the Netherlands) and the French-Italian SAMP/T system (similar in capability to the Patriot) which deployed its first battery in September of this year.[1] The US-German-Italian cooperative effort to build a successor to the Patriot system, Medium Extended Air Defense System (MEADS) has experienced cost overruns, several programmatic "near-death" experiences and, after 15 years, has yet to produce a workable prototype that can be tested. The US Defense Department recently decided to provide enough funding to complete development of the system, but not proceed to production and acquisition.

The most widespread and capable missile defense assets – and therefore the most relevant within a NATO missile defense context – are maritime sensor and interceptor systems. A number of allies have versions of the Aegis ship-based radar system, including Spain and Norway. Other nations have deployed similar ship-based sensors able to track incoming missiles and provide targeting data to interceptors, including the Dutch L-band Active Phased Array Radar (APAR). Some of these vessels will be limited to tracking and target acquisition functions, while others will be equipped with interceptor missiles such as the Standard Missile 3 (SM-3). In order to share the economic and operational burden of territorial defense, an idea that surfaced repeatedly throughout the RUSI conference was that of creating a "pool" of interceptor missiles which could be rotated amongst NATO members. Until SM-3 missiles or their equivalents are deployed by NATO countries in substantial numbers, the alliance's European members will not be able to provide for their own territorial defense. Current and short term NATO BMD assets will allow protection of deployed forces and bases, but are point defenses and cannot provide any overlapping territorial defense. For that,

Defended area with elements operating individually

Defended area with elements integrated together with a radar

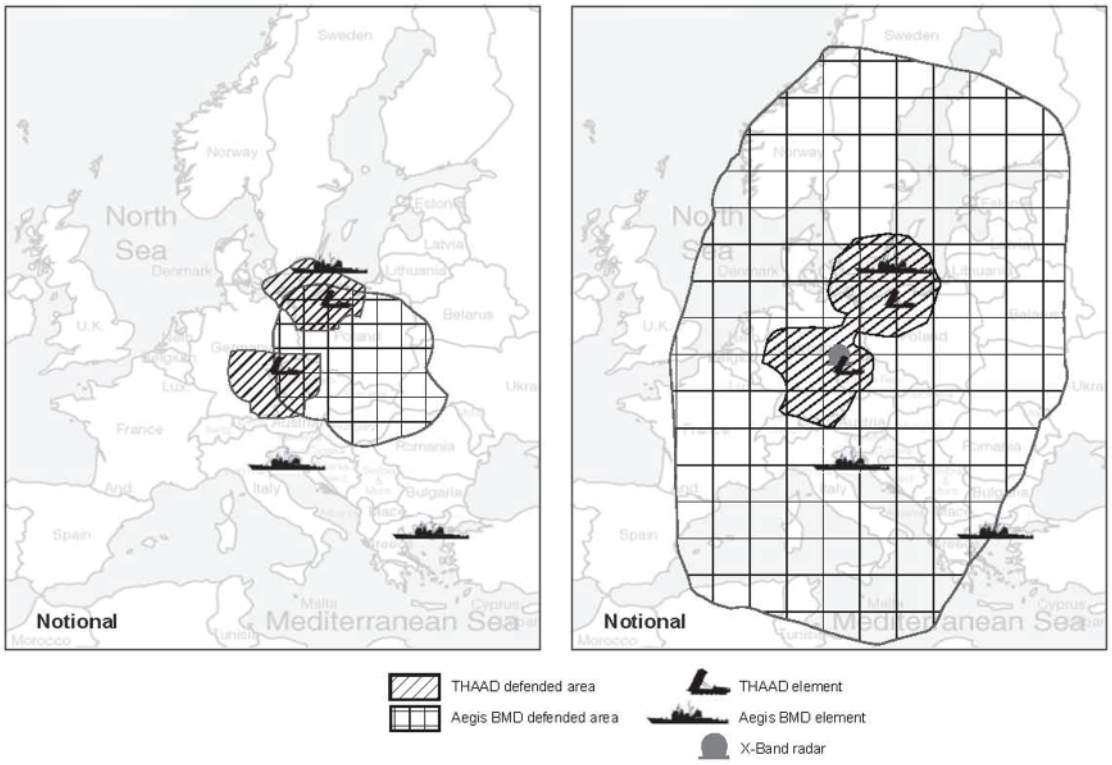

Figure: The same number of elements acting individually provides a smaller defended area than when those elements are integrated together with a radar. Source: GAO analysis of Missile Defense Agency data.

US built and owned upper tier systems for area defense such as the Standard Missile 3 and Terminal High Altitude Area Defense (THAAD) are needed.

The Obama administration's Phased Adaptive Approach (PAA) for European missile defense plans to develop and deploy defenses in four distinct stages. Phase One, which is being implemented now, would cover portions of southern Europe and include the deployment of the USS Monterey, an BMD ship with the SM-3 Block IA interceptor. In addition, a forward deployed AN/TPY-2 sensor will be placed in Turkey to improve the performance of these elements, as well as that of the GMD system in Alaska and California. In Phase Two, to be implemented around 2015, the deployment of more sensors, a newer version of the SM-3 interceptor (the Block IB), and the inclusion of a land-based SM-3 facility ("Aegis Ashore") in Romania would expand the coverage area. By approximately 2018, Phase Three would add an additional land based site in Poland and yet another version of the SM-3 (Block IIA) to expand coverage to all NATO allies in Europe from medium to intermediate range threats. By 2020 and Phase Four, the final upgrade to the SM-3 (Block IIB) would improve MRBM and IRBM defenses, and provide a limited early intercept capability against the ICBM threat to the US from the Middle East.[2]

Rasmussen correct observed in his 2010 article that coordinated missile defenses tying together alliance members' assets can greatly enhance the system's overall capability, especially with multiple overlapping sensors that can provide tracking and discrimination data for interceptors. At this point, however, there are few assets for NATO to coordinate. Existing national assets are a patchwork of point defenses and sensors that require either substantial NATO investments or, more likely, the continued implementation of the Obama administration's Phased Adaptive Approach. It is only with this contribution that territorial defenses can be realized. While the

proposed PAA architecture is attractive for its flexibility and adaptability, the transportability of all BMD elements in the US European plan (including the land-based SM-3 sites) makes its removal much easier than the Bush "third site" approach, which entailed permanent structures in Poland and the Czech Republic. The phased approach also allows for the non-implementation of the plan's later stages if political or strategic circumstances were to change. The Obama administration has made it perfectly clear that it plans to follow through with all four phases of the PAA regardless of the contributions made by other NATO members – and, notably, regardless of how the Iranian threat develops.

The Obama administration has framed this European PAA as the US contribution to NATO's territorial defensive system. Secretary General Rasmussen has stated that NATO is already committed to the cost of developing theater defense, estimated at 800 million Euros over 14 years. The infrastructure needed to connect NATO's system with the Phased Adaptive Approach is estimated to be less than 200 million Euros. In this new period of austere budgets, there is widespread concern that national governments will not be willing to fund the purchase of the upper-tier systems needed to provide meaningful territorial defense. As some have pointed out, the US PAA is in many ways "too good": it provides a territorial defense of European NATO members within a decade (provided the development of the SM-3 progresses as expected) without any contribution from NATO. There seems to be little incentive for NATO countries to invest too heavily in BMD assets that simply add another redundant layer of defenses to those of the United States.

MILITARY BENEFITS OF NATO BMD

The military utility of missile defense can be compared to that of nuclear weapons, whereby its strategic and psychological effects are much more powerful than its operational capabilities. While no one would deny that missile defenses would be irreplaceable for political leaders in the event of a missile attack – few would debate the costs of such a system as a nuclear armed missile careens towards Brussels, Rome, Paris or Oslo – the real benefits of deploying BMD are found prior to having missiles in the air. Nevertheless, the system which will most likely be deployed within the next ten years will have the capacity to protect European populations, its deployed forces and US military assets stationed in the region. In the event of a limited nuclear attack consisting of simple ballistic missiles without complex penetration aids such as countermeasures, missile defenses would most likely be able to intercept them before impact.

The 2009 US policy adjustment, cancelling the so-called "third site" which would have provided redundant defensive coverage of the United States and replacing it with a smaller more mobile system based on Aegis BMD, actually improved the defensive coverage of Europe significantly. The balance between offense and defense often hinges upon quantitative advantage. The larger the attack, the more difficult it is for the defense to distribute its interceptors effectively. With the new PAA, a much greater number of interceptors are available and improves the system's ability to handle smaller missile attacks as it can fire several interceptors at each incoming threat (a so-called "shoot-look-shoot" tactic).

Apart from the obvious benefit of offering some protection to Europe from a catastrophic nuclear attack, the deployment of defenses has secondary military benefits as well. The NATO alliance can feel more confident when deciding to intervene in a regional conflict knowing that the actors cannot credibly threaten retaliatory strikes against European soil. NATOs deployed conventional forces represent a more credible deterrent threat and a more effective military force if they can be deployed under the protection of tactical or regional missile defenses. As military forces have acknowledged for generations, the sword can be much more effective when the shield offers protection as well.

Operational issues relating to command and control (C2) have yet to be resolved, however. While it is assumed that the Supreme Allied Commander, Europe (SACEUR) will hold operational C2 responsibilities, there are legitimate questions as to who will retain

ultimate control over the system. Rasmussen and other officials discuss NATO's ALTBMD program as "plugging into" the US system, while US officials talk about how elements of the PAA signifies a US "contribution" to the NATO system. According to Russia's ambassador to NATO Dmitry Rogozin, the US would surely stand at the top of the command structure: "you have one button and 28 fingers. I even know which finger will press the button" (*Global Security Newswire* 2010). This will undoubtedly be the case as SACEUR is always a United States military officer.

Regardless, such issues are always challenging even within a US context: missile and air defense responsibilities rest with each regional Combatant Commander and coordinating tactical responses to long range missile attacks that cross Area of Responsibility boundaries remain challenging. Given the limited flight times of short to medium range missiles, however, the timeline for decision making is so compressed that launch authority would almost certainly be pre-delegated (and thus pre-debated as well). Therefore, C2 issues would not likely arise for a simple attack of a few missiles against Europe, but would be difficult in the event of a salvo launch or a coordinated attack conducted in several waves and with missiles of various ranges.

The military benefits must also be viewed with the opportunity costs in mind. Investments in missile defenses – especially in an era of tight defense budgets – means less funding for other priorities. The creation of defenses, rather than dissuade states from pursuing ballistic missile technology, may encourage both qualitative and quantitative improvements to missile inventories in order to overcome defenses. As potential adversaries may view ballistic missiles as a means of asymmetrically balancing the conventional dominance of the United States and its allies, they may be unwilling to simply give up their only available tools for politically influence.

POLITICAL BENEFITS OF NATO BMD

Rasmussen argues that missile defenses signify a "clear demonstration of allied solidarity and burden-sharing in the face of a common threat" and "offer opportunities for genuine cooperation with Russia". NATO is eager to involve Russia in its missile defense project. The Russians have responded several times by repeatedly requesting more information: Rogozin complained in October 2010 that "when we ask, time and again, what the technical parameters of this system are, what the zone of its deployment is, who the enemy will be and why missile threats have not been assessed before deploying anything, we never get an answer" (ibid.). Signs that some of the political maneuvering had ceased were evident at the Lisbon as Russia confirmed it would stand ready to participate in building a common system to neutralize common challenges, which would most likely entail separate NATO and Russian systems with a means of exchanging data to establish a joint "security roof" over Europe. The rhetorical battle resumed soon after the summit, however, as disagreements over the details of a joint BMD effort.

The development of regional missile defense architecture in Europe may alter the strategic context for the continued deployment of US tactical nuclear weapons in Europe. The 2010 BMDR noted that "Against nuclear-armed states, regional deterrence will necessarily include a nuclear component (whether forward deployed or not). But the role of U.S. nuclear weapons in these regional deterrence architectures can be reduced by increasing the role of missile defenses and other capabilities" (Office of the Secretary of Defense 2010). As Oliver Thranert has argued, the assurance value of missile defenses may eventually allow the United States to reconsider its deployment options regarding strategic nuclear forces in Europe. While removing these forces may cause concern among US allies, weaken extended deterrence and potentially cause some nations to pursue their own nuclear programs, BMD systems – especially those requiring deployed US assets in Europe such as ground based interceptors and Patriot batteries – may alleviate allied concerns and lessen the effects of redeployment (Thranert 2009/2010). Germany is most closely linked to this position,

while France remains adamant in their support for a nuclear deterrent capability.

NATO would also benefit politically from the creation of missile defenses, as it reinforces the alliance's Article Five commitment and the foundational concept of European territorial defense. Unfortunately for NATO-Russian cooperation, the push from some alliance members (including Norway) to return to "core functions" is inspired partly by Russia's confrontational posture over the past few years. In any case, missile defenses provide another means of reinforcing a shared perception of threats and risks regardless of the direction from which they originate, further intertwining US and NATO security interests and deepening transatlantic security cooperation. The United States has a security interest in extending missile defenses to NATO, if only to avoid having regional actors such as Iran attempt to deter the US from intervention by threatening to attack its allies in Europe. The PAA would be an effective means of continuing US-NATO military cooperation in a post-Afghanistan era, and keep the United States involved on the European continent at a time when much of its focus has shifted towards Asia. Ultimately, then, the political benefits of missile defense are more convincing than any military effects of the system.

COOPERATION WITH RUSSIA

These political benefits for the alliance may come at the expense of NATO-Russian relations, however, unless some sort of compromise can be reached. The Russians have a number of legitimate concerns which have thus far not been seriously considered by the alliance. As it reduces and reorganizes its conventional military forces, Russia has increasingly emphasized the role of nuclear forces in its strategic posture in order to remain (in appearances at least) a Great Power. Missile defenses, regardless of the threat for which they are intended, have the potential to reduce Russia's ability to deter potential aggressors or use its missiles for coercive purposes. It may be the latter point that worries some NATO members, especially after Moscow earlier threatened to deploy Iskander missiles and target certain countries that hosted missile defense installations.

Russia has asked for legal assurances that NATOs missile defenses will not be used against them. If the alliance truly is interested in a cooperative relationship, Moscow seems to argue, than it would no sooner consider employing missile defenses against Russia than it would against the other two nuclear states in Europe: Great Britain or France. Legal assurances should be no problem at all.[3] But the United States and its NATO allies are not quite ready to treat Moscow on equal terms as London or Paris, even though they refuse to admit it. Russia obviously continues to regard NATO with extreme skepticism; its demands for cooperation may be understood as adhering to the old adage: "Keep your friends close, and your enemies closer".

By pressing for a joint BMD system, Moscow perhaps hopes it can integrate itself in the command structure and ensure that defenses will not hinder its missile forces. A truly joint system could in effect give Russia the ability to deny the launch of NATO interceptors. NATO officials have recognized these possible outcomes and refuse to accept the truly joint system demanded by Moscow, offering instead the implementation of two independent but coordinated systems. One could also speculate about the motivations behind the continual stream of Russian proposals that are almost universally understood to be unacceptable to the alliance. On the other hand, NATO appears willing to cooperate with Russia as long it can continue with its missile defense plans without accommodating Russian concerns. Given the political trajectory over the past months, the prospects for constructive partnership seem rather poor.

Secretary General Rasmussen and the Obama administration are correct in arguing that if the NATO alliance and Russia could come to some agreement on missile defense, it would be a "game changer" that could usher in a new era of cooperation between East and West. But a huge chasm of lingering mistrust prevents significant partnership on this most challenging project. Arms control agreements are in

many ways an easier cooperative venture, with national control and international verification. Missile defense cooperation would entail joint operation of a technologically advanced and highly sensitive weapons system. Some observers have expressed concerns that NATO appears to be positioning missile defense cooperation as the bridge to future cooperative efforts. It may be a bridge too far.

CONCLUSION

The US and its NATO allies will likely be able to construct a networked missile defense system that is effective against a smaller number of simple threats, though salvo launches will likely result in some "leaks". European NATO countries will likely make token contributions, mostly as a second layer of defensive capability underneath the US funded and controlled upper tier system based on the SM-3 and THAAD systems. The C2 structure will likely emphasize pre-delegated launch authorization with an American at the top of the command chain. The military and strategic benefits will remain debatable unless a regional power such as Iran threatens or carries out a suicidal ballistic missile attack on European soil. The political benefits have the potential to be far more convincing, dependent on the outcome of NATO discussions with Russia. Whether these benefits are worth the political and economic price tag remain to be seen.

ENDNOTES

1 Earlier versions of the Patriot system had very mixed results in the 1991 Gulf War. The later PAC-2 and PAC-3 versions have improved and were much more successful in the 2003 Iraqi invasion, though they also were responsible for several blue-on-blue incidents, including one that resulted in the loss of a British fighter.

2 This Phased Adaptive Approach will also be applied in East Asia and the Middle East, eventually constituting a globally networked missile defense architecture.

3 At the London conference, this argument was also used to dismiss Russian calls for legal assurances. In effect, the idea of NATO worrying about Russian missiles is so ludicrous that legal assurances are meaningless. When expressed only minutes apart from an acknowledgement that Eastern European countries obviously are eager to host US missile defense installations as a means of hedging against a threat from Russia, however, such dismissive arguments seem disingenuous.

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